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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/714,294	11/17/2000	Masahiro Watanabe	1538.1002/JDH	4921

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EXAMINER

KIBLER, VIRGINIA M

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 09/09/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/714,294

Applicant(s)

WATANABE ET AL.

Examiner

Virginia M Kibler

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-10, 13-16, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-10, 16, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/9/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment received on 6/9/04 has been entered. Claims 1-3, 6-10, 13-16, 19, and 20 remain pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 6-10, 13-16, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mita et al. (5,231,677) in view of Okubo (5,392,137).

Regarding claims 1, 8, and 14, Mita et al. ("Mita") discloses a contour image generator for generating a contour image from an input image generated by reading, as a multi-valued image, print contents of printed matter into (Col. 4, lines 25-29), a contour adder for adding contours to the contour image (Col. 4, lines 29-32), and an image synthesizer for superimposing the input image and a smoothed image obtained by performing a smoothing process for the input image (Col. 4, lines 33-38). Mita does not appear to expressly disclose referring to a contour density distribution. However, Okubo teaches that it is known to refer to a contour density distribution (Col. 4, lines 17-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the contour adder disclosed

by Mita to include referring to a contour density distribution as taught by Okubo because it is well known in the art and distinguishes undesired noise.

In the absence of an explicit definition of the density of contour pixels recited in the claims as “the number of pixels per unit length” or “the number of the pixels in the window that do not have a contour level of 0” (Spec. page 8, last paragraph), the Examiner interprets the density as pixel intensity. Mita discloses the contour adder includes a determination means for scanning the contour image with a predetermined window, and for determining whether a density of contour pixels in the predetermined window is equal to or greater than a threshold value (Col. 4, lines 20-46; Col. 5, lines 14-68, Col. 6, lines 1-54). Mita discloses an edge detector (Figure 1, element a) using a spatial filter (Col. 5, lines 1-11). Traditionally, an edge detector is performed using a low pass filter which calculates an average value of contour levels of contour pixels in the predetermined window and changes the contour level of a target pixel in the window to the average value if the density of the contour pixels in the window is equal to or greater than the average value, or threshold value, and the contour level of the target pixel in the window is smaller than the average value. It would have been obvious to one of ordinary skill in the art to have modified the edge detector disclosed by Mita to expressly disclose a change unit which changes a contour level of a target pixel in the predetermined window to the average value if the density of the contour pixels in the predetermined window is equal to or greater than the threshold value concerning the density and a contour level of a target pixel in the predetermined window is smaller than the average value. The motivation for doing so would have been because performing edge detection with a low pass filter is well known and routinely utilized in the art.

Therefore, it would have been obvious to combine Mita and Okubo to obtain the invention as specified in claims 1, 8, and 14.

Regarding claims 2, 9, and 15, Okubo discloses a deletion means for deleting a contour pixel within the contour image, the contour pixel satisfying at least one condition wherein a contour level of the contour pixel is equal to or small than a first threshold value (Col. 5, lines 19-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the contour adder disclosed by Mita to include referring to a deletion means as taught by Okubo because it is well known in the art and allows for edge correction.

Regarding claims 3, 10, and 16, Mita discloses a threshold value is a value for a contour level higher than a contour level caused by printing dots that result from printing and moiré patterns that occur when the print contents are read into (Col. 1, lines 29-67, Col. 2, lines 1-22; Col. 4, lines 20-46).

Regarding claims 6, 13, and 19, Mita discloses an image synthesizer that determines a superimposition ratio for a pixel value of a pixel in the input image and a pixel value of a corresponding pixel in the smoothed image by referring to the contour levels of respective pixels in the contour added image (Abstract; Col. 14, lines 54-66).

Regarding claims 7 and 20, Mita discloses the superimposition ratio is determined by substituting the contour levels of the respective pixels in the contour added image into a predetermined function (Abstract; Col. 14, lines 54-66).

Response to Arguments

4. Applicant's arguments filed 6/9/04 have been fully considered but they are not persuasive.

Summary of Applicant's Argument: Mita does not discuss or suggest changing "a contour level of a target pixel in said predetermined window to said average value" nor changing a contour level of a target pixel to an average value, because the edge emphasize of Mita does not use an average value.

Examiner's Response: In the absence of an explicit definition of the density of contour pixels recited in the claims as "the number of pixels per unit length" or "the number of the pixels in the window that do not have a contour level of 0" (Spec. page 8, last paragraph), the Examiner relies on the industry standard and interprets the density as pixel intensity. Mita discloses an edge detector (Figure 1, element a) using a spatial filter (Col. 5, lines 1-11). Traditionally, an edge detector is performed using a low pass filter which uses an average value. The low pass filter calculates an average value of contour levels of contour pixels in the predetermined window and changes the contour level of a target pixel in the window to the average value if the density of the contour pixels in the window is equal to or greater than the average value, or threshold value, and the contour level of the target pixel in the window is smaller than the average value.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Virginia Kibler can be reached on (703) 308-4072. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Virginia Kibler
09/02/04

MEHRDAD DASTOURI
PRIMARY EXAMINER

